

Mineral Industry Surveys

For information, contact:

Peter H. Kuck, Nickel Commodity Specialist

U.S. Geological Survey

989 National Center

Reston, VA 20192

Telephone: (703) 648-4965, Fax: (703) 648-7757

E-mail: pkuck@usgs.gov

Barbara J. McNair (Data)

Telephone: (703) 648-7952

Fax: (703) 648-7975

MINES FaxBack: (703) 648-4999

Internet: <http://minerals.usgs.gov/minerals>

NICKEL IN MARCH 2000

In March, reported domestic nickel consumption on a daily average basis was almost identical to that of February, according to the U.S. Geological Survey. Average daily consumption by the stainless steel industry in March was 8% greater than the revised February average of 123 metric tons (t). The increase for stainless steel was offset by decreases in the unspecified category. Daily consumption by alloy steel producers—a considerably smaller tonnage than that of stainless steel—increased by 4%. Consumption of elemental nickel to make nickel-base corrosion-resistant alloys decreased by 4%. Sales to plating companies averaged 42 metric tons per day (t/d), up 8% from the February sales figure. Percentages reported in this paragraph may not be verifiable owing to concealment of individual company proprietary data.

On March 31, U.S. consumer stocks of cathode, pellets, briquets, and powder totaled 2,320 t—5% less than the 2,430 t (revised) for February 29 and 59% less than the 1999 high of 5,690 t (revised) reached on January 31 a year ago. Stocks in London Metal Exchange (LME) warehouses worldwide decreased 12% during March to 31,014 t. LME stocks were 46,962 t at yearend 1999, down from 65,964 t at yearend 1998. Preliminary data collected by the International Nickel Study Group indicated that, at the end of February 2000, world nickel producers (excluding those in Austria, China, the former Yugoslavia, and the Ural area of Russia) had approximately 93,400 t of Ni in primary products in stock, of which 70,500 t were Class I materials. Class I materials are refined products with a nickel content of 99% or greater (electrolytic cathode, pellets, briquets, rondelles, powder, etc.). Class II materials include ferronickel, nickel oxide sinter, and East Asian utility nickel—products with a nickel content less than 99%.

Trade data for March 2000 will appear in a subsequent issue.

Norilsk Nickel launches 10-year development program requiring \$3 to \$5 billion [Part 1 of 2]

(Part 2 will appear in a subsequent issue.)

Program overview.—On November 9, 1998, the board of

directors of RAO Norilsk Nickel approved in principle a 10-year development plan aimed at modernizing the mining, smelting, and refining operations of its subsidiaries in northern Russia (RAO Norilsk Nickel, 1999c, 2000). The subsidiaries would reequip their production facilities, use more effective extraction techniques, and adopt state-of-the-art technology. The plan was designed to improve metal recoveries, reduce energy consumption, and cut overall production costs. The plan was proposed in the wake of the partial privatization and major restructuring of the world's largest nickel producer. The Norilsk Mining Company was created to manage the A.P. Zavenyagin Norilsk Mining and Metallurgical Combine on the Taimyr Peninsula of north-central Siberia. The Kola Metallurgical and Mining Company, a second new entity, was to oversee the Pechenganickel Mining and Metallurgical Combine, the Severonickel Combine, and related activities on the Kola Peninsula (RAO Norilsk Nickel, 1999b).

In April 1999, the board of directors of Interros, the principal shareholder in Norilsk Nickel, also approved the 10-year plan, permitting Norilsk's management to transform the plan into a viable program. Norilsk's management will have to obtain \$3 to 5 billion from foreign investors to pay for all of the projects outlined in the plan. According to the plan, the investment funds would be distributed as follows: 42% for exploration and mining, 16% for ore beneficiation facilities, 17% for metallurgical processing facilities, and 25% for power generation, heating supply systems, and other production-related infrastructure (RAO Norilsk Nickel, 1999a,c).

The first step of the program will require that \$200 million be raised immediately. The International Finance Company Bank, Norilsk's financial consultant, will be responsible for developing the necessary market instruments needed to attract the \$200 million. Interros would guarantee the investments under a "repo" agreement that could give Interros a 37.9% stake in the Norilsk Mining Company (Budrys, 2000). An additional \$800 million will have to be raised before January 2003 if the program is to keep on schedule. The initial \$200 million would be used to expand Norilsk Nickel's product line, improve sales to Russian consumers,

create an overseas sales network, and improve the company's transport infrastructure. Norilsk Nickel has no plans to cut nonferrous metal exports and would have to increase production to meet the forecasted growth in Russian demand for oil country goods and other specialty steel products.

References Cited

Budrys, Aleksandras, 2000, Russia—Russian Norilsk seeks \$1 BLN over next two

years: Reuters Limited, wire story from Moscow, May 18, 1 p.
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———1999c, Norilsk Nickel maps out its development to 2010: Moscow, Russia, RAO Norilsk Nickel press release, February 10, 1 p.
———2000, Into the new millennium—Norilsk Nickel today: Moscow, Russia, RAO Norilsk Nickel booklet, 32 p.

TABLE 1
CONSUMPTION OF NICKEL (EXCLUSIVE OF SCRAP), BY FORM AND USE 1/

(Metric tons, nickel content)

Period	Cathodes, pellets, briquets, and powder	Ferronickel	Oxide-sinter, salts, and other forms	Total	Total year to date
1999:					
March	7,900 r/	487	815 r/	9,200 r/	25,000 r/
April	7,740 r/	845	602	9,180 r/	34,200 r/
May	8,110 r/	1,150	693 r/	9,950 r/	44,200 r/
June	8,360 r/	1,200	695	10,300 r/	54,400 r/
July	7,540 r/	1,150	479 r/	9,170 r/	63,600 r/
August	7,220 r/	1,000	349	8,570 r/	72,200 r/
September	7,290 r/	1,490	321	9,100 r/	81,300 r/
October	6,910 r/	1,170	288	8,370 r/	89,600 r/
November	6,900 r/	1,210	457	8,570 r/	98,200 r/
December	7,280 r/	1,060	871	9,210 r/	107,000 r/
January-December	88,200 r/	12,600	6,620 r/	107,000 r/	XX
2000:					
January	6,950	1,380	566 r/	8,900	8,900
February	7,660	1,350	435 r/	9,440 r/	18,300 r/
March:					
Steel:					
Stainless and heat resisting	2,160	1,350	W	3,510	10,500
Alloy (excludes stainless)	395	W	W	395	1,390
Superalloys	1,550	--	W	1,550	4,370
Copper-nickel alloys	W	W	--	W	W
Electric, magnetic, and expansion alloys	48	--	--	48	119
Other nickel & nickel alloys	W	--	W	W	W
Cast iron	W	--	--	W	W
Electroplating (sales to platers)	1,280	--	W	1,280	3,410
Chemical and chemical uses	W	--	--	W	W
Other uses	2,500	9	775	3,280	8,650
Total reported	7,920 2/	1,360	775	10,100	28,400
Total all companies (calc) 3/	XX	XX	XX	15,000	42,200
2000: January-March	22,500	4,100	1,780	28,400	XX
1999: January-March	20,900	2,300	1,880	25,000	XX

r/ Revised. W Withheld to avoid disclosing company proprietary data; included in "Other uses" category. XX Not applicable. -- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Of consumption, 6,490 metric tons were consumed as cathodes and pellets, the remainder as briquets and powder.

3/ Figures represent calculated apparent consumption; based on the revised proportion of reported primary consumption (67.27%) to apparent primary consumption for 1998.

TABLE 2
ENDING STOCKS OF NICKEL (EXCLUSIVE OF SCRAP) HELD BY CONSUMERS,
BY FORM AND USE 1/ 2/

(Metric tons, nickel content)

Period	Cathodes, pellets, briquets, and powder	Ferronickel	Oxide-sinter, salts, and other forms	Total
1999:				
March	3,580	354	431	4,360
April	3,120	97	364	3,580
May	3,600	145	351	4,100
June	3,840	110	312	4,260
July	3,560	170	263	4,000
August	3,020	315	269	3,610
September	3,150	202	447	3,800
October	3,040	320	507	3,870
November	3,580	441	597	4,620
December	2,690	416	410	3,520
2000:				
January	2,470 r/	317	366 r/	3,150 r/
February	2,430 r/	224	384	3,040 r/
March:				
Steel (stainless, heat resisting and alloy)	1,120	252	211	1,580
Nonferrous alloys 4/	1,140	--	(3/)	1,140
Foundry (cast irons)	(3/)	--	(3/)	(3/)
Chemical (catalysts, ceramics, plating salts, etc.) and unspecified uses	60	--	41	101
Total	2,320	252	252	2,820

r/ Revised. -- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Stocks held by companies that consume nickel in more than one end use category are credited to the major category. Stocks are subject to revisions owing to inventory adjustment.

3/ Included in the "Chemical and unspecified uses" category.

4/ Includes superalloys, nickel-copper and copper-nickel alloys, permanent magnet alloys, and other nickel alloys.

TABLE 3
CONSUMPTION AND ENDING STOCKS OF PURCHASED SECONDARY NICKEL, BY USE 1/

(Metric tons, nickel content)

Period	Consumption			Stocks		
	Ferrous scrap 2/	Nonferrous scrap 3/	Total scrap	Ferrous scrap 2/	Nonferrous scrap 3/	Total scrap
1999:						
March	3,890	850	4,740	4,240	159	4,400
April	3,990	963	4,950	3,650	160	3,810
May	4,360	700	5,060	3,190	171	3,360
June	4,610	1,320	5,930	2,780	217	3,000
July	3,740	1,070	4,810	2,590	177	2,760
August	4,120	1,090	5,200	2,530	167	2,700
September	4,950	1,030	5,980	2,890	157	3,040
October	4,770	1,260	6,030	2,700	156	2,860
November	5,860	1,160	7,020	2,790	150	2,940
December	5,100	872	5,980	3,680	692	4,370
January-December	53,300	11,900	65,200	XX	XX	XX
2000:						
January r/	5,760	1,260	7,030	3,450	657	4,090
February r/	5,500	1,250	6,750	3,680	663	4,340
March	5,870	1,130	7,000	3,480	668	4,150
2000: January-March	17,100	3,640	20,800	XX	XX	XX
1999: January-March	11,800	2,400	14,200	XX	XX	XX

r/ Revised. XX Not applicable.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Nickel content is calculated from an average nickel content and the reported gross weight of scrap.

3/ Combined consumption and stocks of aluminum-base, copper-base, and nickel-base scrap.

TABLE 4
U.S. IMPORTS FOR CONSUMPTION OF NICKEL, BY COUNTRY 1/

(Metric tons, nickel content 2/)

Period and country of origin	Cathodes, pellets, and briquets	Powder and flakes	Ferro- nickel	Metal- lurgical- grade oxide	Waste and scrap	Stainless steel scrap	Chemicals	Total 3/	Total year to date 4/	Wrought nickel
1999:										
February	6,540	783	1,440	302	265	211	240	9,780	22,400	23
March	10,700	926	836	366	394	178	235	13,600	36,100	78
April	6,230	769	1,150	306	414	181	302	9,350	45,400	103
May	9,860 r/	575	860	231	428	303	190	12,500	57,900	80
June	13,000	1,080	1,550	399	260	415	241	16,900	74,800	58
July	5,890 r/	939	1,730	--	330	243	232	9,360 r/	84,100 r/	105
August	9,280	790	1,310	285	316	263	161	12,400	96,500 r/	110
September	13,800	818	1,240	243	192	270	270	16,800	113,000	120
October	6,100	748	1,190	224	526	335	238	9,370	123,000	106
November	10,400	741	813 r/	269	685	1,800	219	14,900 r/	138,000	124
December	7,740	511	996	459	428	603	296	11,000	149,000	95
January-December	109,000	9,380	14,300	3,270	4,520	4,960	2,810	149,000	XX	1,090
2000:										
January	10,900	998	1,400	323	521	501	227	14,900	14,900	53
February:										
Australia	1,620	154	--	5	--	--	--	1,780	3,240	--
Brazil	400	2	--	--	--	--	--	402	815	--
Canada	4,370	620	--	330	88	432	7	5,850	11,500	1
Colombia	--	--	192	--	--	5	--	197	387	--
Dominican Republic	--	--	706	--	--	2	--	708	1,420	--
Finland	456	50	--	--	--	--	99	605	1,030	--
France	172	--	--	--	68	--	63	303	460	6
Germany	--	2	--	--	90	--	37	129	237	84
Japan	--	(5/)	--	--	6	--	42	48	108	13
Mexico	--	--	--	--	35	171	1	207	452	1
New Caledonia	--	--	250	--	--	--	--	250	753	--
Norway	2,370	--	--	--	--	--	--	2,370	3,000	--
Russia	1,590	--	--	--	--	--	--	1,590	4,510	--
South Africa	--	--	--	--	--	--	--	--	121	--
United Kingdom	441	15	--	--	60	--	6	522	1,350	(5/)
Zimbabwe	18	--	--	--	--	--	--	18	230	--
Other	45 6/	79	--	--	52	8	73	257	574	4
Total	11,500	922	1,150	335	399	618	328	15,200	30,100	109
2000: January-February	22,400	1,920	2,550	658	920	1,120	555	30,100	XX	162
1999: January-February	16,500	1,480	2,670	487	546	371	421	22,400	XX	106

r/ Revised. XX Not applicable. --Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ The nickel contents are assumed to be as follows: metallurgical-grade oxide (77%), waste and scrap (50%), and stainless steel scrap (7.5%). The chemical category includes chlorides (25%), sulfates (22%), and other salts (22%), supported catalysts (22%), and oxide, sesquioxide and hydroxide (65%).

3/ Excludes wrought nickel.

4/ May include revisions for prior months.

5/ Less than 1/2 unit.

6/ All or part of these data have been referred to the Bureau of the Census for verification.

Source: Bureau of the Census.

TABLE 5
U.S. EXPORTS OF NICKEL, BY COUNTRY 1/

(Metric tons, nickel content 2/)

Period and country of destination	Cathodes, pellets, and briquets	Powder and flakes	Ferro- nickel	Metal- lurgical- grade oxide	Waste and scrap	Stainless steel scrap	Chemicals	Total 3/	Total year to date	Wrought nickel
February	11	93	3	168	812	1,010	337	2,440	4,430	59
March	36	90	1	105	958	1,850	460	3,500	7,930	63
April	15	69	1	161	989	2,070	334	3,640	11,600	77
May	78	44	--	102	920	1,600	523	3,270	14,800	121
June	54	85	2	94	979	1,950	200	3,360	18,200	59
July	65	76	6	105	725	1,310	363	2,650	20,800	52
August	142	82	9	181	945	1,280	256	2,900	23,700	69
September	74	60	30	230	1,230	1,830	220	3,670	27,400	52
October	105	89	--	57	1,230	2,290	461	4,230	31,600	58
November	74	95	--	108	1,340	1,170	229	3,020	34,700	98
December	85	65	9	60	1,230	2,330	444	4,220	38,900	65
January-December	832	908	61	1,470	12,000	19,500	4,160	38,900	XX	922
2000:										
January	358	87	11	128	1,130	2,040	136	3,880	3,880	86
February:										
Australia	--	--	--	--	--	1	--	1	1	(4/)
Belgium	--	--	--	--	22	42	34	98	123	2
Canada	15	35	15	80	729	308	35	1,220	2,560	10
Germany	--	8	--	--	45	1	11	65	130	1
India	--	(4/)	--	--	--	3	1	4	34	2
Italy	--	1	--	--	--	--	--	1	5	--
Japan	--	6	--	--	148	18	25	197	785	1
Korea, Republic of	--	1	--	--	97	285	5	388	845	--
Mexico	61	1	--	20	7	15	12	116	273	4
Netherlands	--	6	--	--	--	--	5	11	28	--
South Africa	--	--	--	--	--	139	1	140	227	--
Spain	--	--	--	--	--	--	3	3	383	--
Sweden	--	--	--	--	16	--	--	16	37	--
Taiwan	--	(4/)	--	--	--	338	17	355	769	--
United Kingdom	(4/)	1	--	--	--	--	1	2	9	5
Other	179	24	--	--	71	76	84	434	721	14
Total	255	83	15	100	1,140	1,230	234	3,050	6,930	39
2000: January-February	613	170	25	228	2,260	3,260	370	6,930	XX	125
1999: January-February	103	153	3	268	1,430	1,800	675	4,430	XX	208

XX Not applicable. -- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ The nickel contents are assumed to be as follows: metallurgical-grade oxide (77%), waste and scrap (50%), and stainless steel scrap (7.5%). The chemical category includes chlorides (25%), sulfates (22%), and other salts (22%), supported catalysts (22%), and oxide, sesquioxide and hydroxide (65%).

3/ Excludes wrought nickel.

4/ Less than 1/2 unit.

Source: Bureau of the Census.

TABLE 6
U.S. IMPORTS FOR CONSUMPTION OF NICKEL ALLOYS, BY COUNTRY 1/

(Metric tons, gross weight)

Period and country of origin	Unwrought alloyed ingot	Bars, rods, and profiles	Wire	Plates and sheets	Foil	Tubes and pipes	Other alloyed articles	Total	Total year to date
1999:									
February	198	253	339	172	1	37	48	1,050	2,080
March	291	311	427	200	2	135	79	1,450	3,520
April	265	222	344	137	2	33	72	1,080	4,600
May	248	174	348	242	(2/)	244	75	1,330	5,930
June	248	162	373	298	1	74	52	1,210	7,140
July	209	180	341	201	1	94	63	1,090	8,220
August	172	124	332	268	(2/)	65	46	1,010	9,230
September	128	158	246	192	10	35	109	878	10,100
October	85	137	336	281	(2/)	85	95	1,020	11,100
November	141	151	347	146	10	200	70	1,070	12,200
December	145	158	391	224	7	105	73	1,100	13,300
January-December	2,370	2,220	4,100	2,530	34	1,230	820	13,300	XX
2000:									
January	167	156	348	180	1	77	145	1,080	1,080
February:									
Australia	51	--	--	--	--	--	--	51	115
Belgium	--	--	--	--	--	--	--	--	(2/)
Canada	37	--	1	--	--	3	3	44	54
France	--	--	124	29	7	1	(2/)	161	324
Germany	1	42	85	204	--	51	3	386	686
Italy	--	21	3	--	--	6	(2/)	30	76
Japan	--	--	(2/)	--	2	1	8	12	32
Mexico	--	--	6	--	--	--	60	66	133
Netherlands	13	--	--	--	1	1	8	23	24
South Africa	39	--	--	--	--	--	--	39	97
Sweden	--	--	112	1	--	8	--	121	295
United Kingdom	18	26	(2/)	1	(2/)	21	1	67	166
Other	1	27	5	(2/)	--	(2/)	74	107	177
Total	160	116	336	235	10	92	157	1,110	2,180
2000: January-February	326	272	684	415	11	169	302	2,180	XX
1999: January-February	437	441	616	338	1	157	86	2,080	XX

XX Not applicable. -- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Less than 1/2 unit.

Source: Bureau of the Census.

TABLE 7
U.S. EXPORTS OF NICKEL ALLOYS, BY COUNTRY 1/

(Metric tons, gross weight)

Period and country of destination	Unwrought alloyed ingot	Bars, rods, and profiles	Wire	Plates and sheets	Foil	Tubes and pipes	Other alloyed articles	Total	Total year to date
1999:									
February	1,090	370	129	723	6	103	263	2,680	5,040
March	896	496	163	688	7	48	206	2,500	7,540
April	910	349	168	688	72	72	266	2,530	10,100
May	545	396	181	614	3	63	193	2,000	12,100
June	682	363	225	620	5	63	272	2,230	14,300
July	702	330	192	486	4	46	483	2,240	16,500
August	643	184	322	570	7	53	273	2,050	18,600
September	806	363	139	542	6	54	164	2,080	20,700
October	927	340	145	538	5	82	204	2,240	22,900
November	595	360	193	679	19	83	352	2,280	25,200
December	771	371	148	546	16	58	215	2,130	27,300
January-December	9,140	4,190	2,180	7,270	161	828	3,550	27,300	XX
2000:									
January	666	323	161	886	1	81	158	2,280	2,280
February:									
Australia	19	--	(2/)	(2/)	--	--	(2/)	19	48
Belgium	(2/)	78	8	8	--	(2/)	43	137	229
Canada	12	71	23	42	4	34	50	236	500
France	302	101	50	5	1	(2/)	16	475	1,040
Germany	2	55	1	35	--	(2/)	2	95	235
India	(2/)	--	--	(2/)	--	--	--	(2/)	4
Ireland	--	--	9	1	--	--	(2/)	10	18
Italy	79	(2/)	1	74	--	--	1	155	345
Japan	(2/)	14	7	45	--	(2/)	2	68	111
Korea, Republic of	1	2	6	44	9	--	30	92	155
Mexico	8	3	68	11	(2/)	4	11	105	176
Netherlands	1	--	--	(2/)	--	8	(2/)	9	16
Singapore	1	3	4	(2/)	--	(2/)	1	9	98
Spain	--	(2/)	--	--	--	1	--	1	2
Sweden	--	(2/)	--	7	1	--	--	8	16
Switzerland	--	7	--	42	--	19	1	69	86
Taiwan	--	--	2	40	--	(2/)	--	42	72
United Kingdom	20	68	30	127	(2/)	3	(2/)	248	790
Other	3	77	9	48	1	11	127	276	388
Total	448	479	218	529	16	80	284	2,050	4,330
2000: January-February	1,110	802	379	1,420	17	161	441	4,330	XX
1999: January-February	1,660	634	299	1,300	21	206	919	5,040	XX

XX Not applicable. -- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Less than 1/2 unit.

Source: Bureau of the Census.

TABLE 8
NICKEL CONSUMPTION IN CAST AND WROUGHT PRODUCTS

	Percent	
	Wrought	Cast
March 2000:		
Stainless and heat resisting steels	80	20
Alloy steels	100	(1/)
Superalloys	86	14
Copper-nickel alloys	100	(1/)
Other nickel-base alloys	100	(1/)

1/ Less than 1/2 unit.

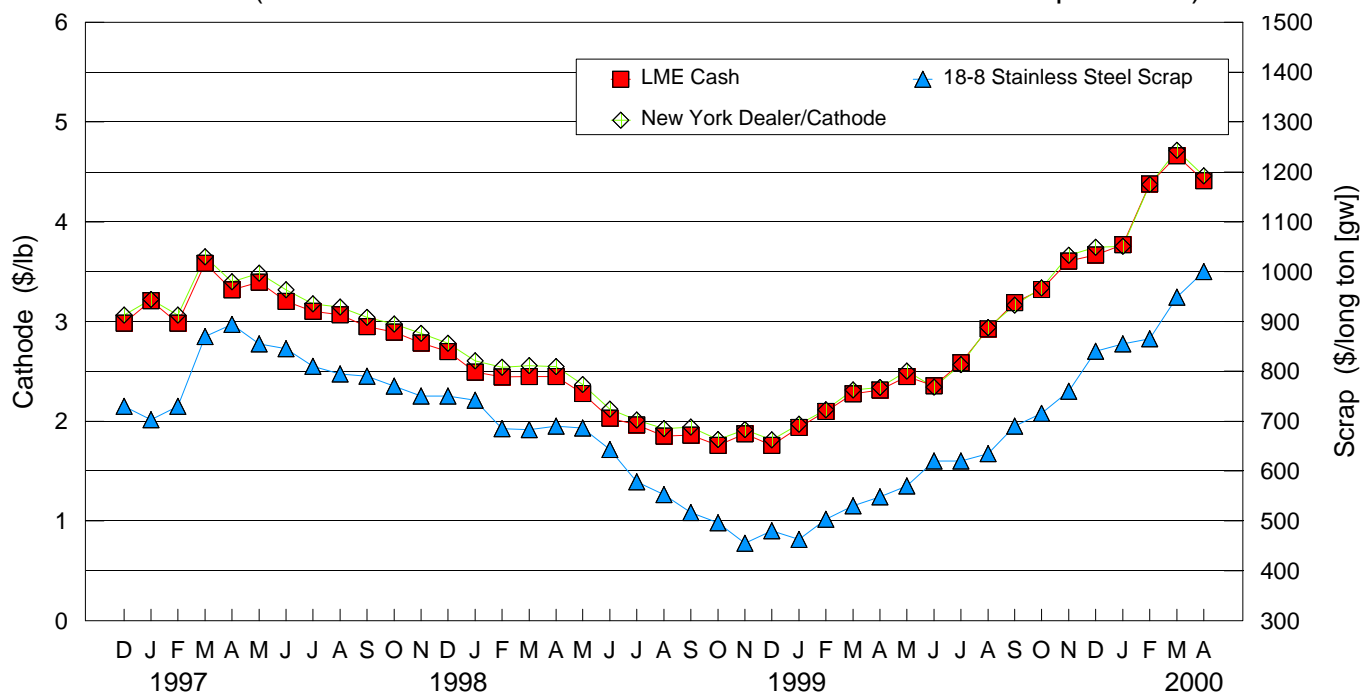
TABLE 9
NICKEL PRICES

Date		Cathode NY Dealer \$/lb.	LME Cash \$/t	LME Cash \$/lb.	18/8 Stainless steel scrap Pittsburgh \$/long ton(gw)
2000:					
Average for week ending:					
February	4	4.01-4.15	8,878.500	4.027	860-870
February	11	4.26-4.44	9,381.000	4.255	860-870
February	18	4.57-4.64	9,846.000	4.466	860-870
February	25	4.66-4.82	10,212.500	4.632	860-870
March	3	4.58-4.81	10,110.500	4.586	860-870
March	10	4.73-4.95	10,440.000	4.736	960-980
March	17	4.77-4.94	10,192.000	4.623	960-980
March	24	4.84-4.93	10,382.000	4.709	960-980
March	31	4.68-4.83	10,131.000	4.595	960-980
April	7	4.56-4.79	9,848.000	4.467	960-1,010
April	14	4.37-4.59	9,657.500	4.381	960-1,010
April	21	4.42-4.57	9,587.500	4.349	960-1,010
April	28	4.49-4.64	9,804.375	4.447	960-1,010
Average for month of:					
February		4.375	9653.333	4.379	865
March		4.716	10,280.109	4.663	949
April		4.460	9,727.500	4.412	1,000

Source: Platt's Metals Week and American Metal Market.

1997-2000 AVERAGE MONTHLY PRICES

(Derived from Metals Week and American Metal Market quotations)



1997-2000 STOCKS

